[6450-01-P]

DEPARTMENT OF ENERGY

10 CFR Part 431

[EERE-2022-BT-STD-0001]

Energy Conservation Program: Energy Conservation Standards for Dedicated-Purpose Pool Pumps

AGENCY: Office of Energy Efficiency and Renewable Energy, Department of Energy.

ACTION: Request for information.

SUMMARY: The U.S. Department of Energy ("DOE") is initiating an effort to determine whether to amend the current energy conservation standards for dedicated-purpose pool pumps ("DPPPs"). Under the Energy Policy and Conservation Act, as amended, DOE must review these standards at least once every six years and publish either a notice of proposed rulemaking ("NOPR") to propose new standards for DPPPs or a notification of determination that the existing standards do not need to be amended. This request for information ("RFI") solicits information from the public to help DOE determine whether amended standards for DPPPs would result in significant energy savings and whether such standards would be technologically feasible and economically justified. DOE also welcomes written comments from the public on any subject within the scope of this document (including those topics not specifically raised), as well as the submission of data and other relevant information.

DATES: Written comments and information are requested and will be accepted on or before [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL*

REGISTER].

ADDRESSES: Interested persons are encouraged to submit comments using the Federal eRulemaking Portal at *www.regulations.gov*. Follow the instructions for submitting comments. Alternatively, interested persons may submit comments, identified by docket number EERE–2022–BT–STD-0001, by any of the following methods:

1. *Federal eRulemaking Portal*: *www.regulations.gov*. Follow the instructions for submitting comments.
2. *E-mail*: to *DPPP2022STD0001@ee.doe.gov*. Include docket number EERE–2022–BT–STD-0001 in the subject line of the message.

No telefacsimiles ("faxes") will be accepted. For detailed instructions on submitting comments and additional information on this process, see section III of this document.

Although DOE has routinely accepted public comment submissions through a variety of mechanisms, including postal mail and hand delivery/courier, the Department has found it necessary to make temporary modifications to the comment submission process in light of the ongoing corona virus ("COVID-19") pandemic. DOE is currently suspending receipt of public comments via postal mail and hand delivery/courier. If a commenter finds that this change poses an undue hardship, please contact Appliance Standards Program staff at (202) 586-1445 to discuss the need for alternative arrangements. Once the COVID-19 pandemic health emergency is resolved, DOE anticipates resuming all of its regular options for public comment submission, including postal mail and hand delivery/courier.

Docket: The docket for this activity, which includes *Federal Register* notices, comments,

and other supporting documents/materials, is available for review at *www.regulations.gov*. All documents in the docket are listed in the *www.regulations.gov* index. However, some documents listed in the index, such as those containing information that is exempt from public disclosure, may not be publicly available.

The docket web page can be found at *www.regulations.gov/docket/EERE-2022-BT-STD-0001*. The docket web page contains instructions on how to access all documents, including public comments, in the docket. See section III for information on how to submit comments through *www.regulations.gov*.

FOR FURTHER INFORMATION CONTACT:

Jeremy Dommu, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Office, EE-5B, 1000 Independence Avenue, SW., Washington, DC, 20585-0121. Telephone: (202) 586-9870. E-mail: *ApplianceStandardsQuestions@ee.doe.gov*.

Amelia Whiting, U.S. Department of Energy, Office of the General Counsel, GC-33, 1000 Independence Avenue, SW., Washington, DC, 20585-0121. Telephone: (202) 586-2588; E-mail: *amelia.whiting@hq.doe.gov*.

For further information on how to submit a comment or review other public comments and the docket contact the Appliance and Equipment Standards Program staff at (202) 287-1445 or by e-mail: *ApplianceStandardsQuestions@ee.doe.gov*.

SUPPLEMENTARY INFORMATION:

Table of Contents

I. Introduction

A. Authority and Background

The Energy Policy and Conservation Act, as amended ("EPCA"),[1] authorizes DOE to regulate the energy efficiency of a number of consumer products and certain industrial equipment. (42 U.S.C. 6291–6317). Title III, Part C[2] of EPCA (42 U.S.C. 6311-6317, as codified), added by Pub. L. 95-619, Title IV, section 441(a), established the Energy Conservation Program for Certain Industrial Equipment, which sets forth a variety of provisions designed to improve energy efficiency. "Pumps" are listed as a type of industrial equipment covered by EPCA, although EPCA does not define the term "pump." (42 U.S.C. 6311(1)(A)) DOE defines "pump" as equipment designed to move liquids (which may include entrained

[1] All references to EPCA in this document refer to the statute as amended through the Energy Act of 2020, Pub. L. 116-260 (Dec. 27, 2020).
[2] For editorial reasons, upon codification in the U.S. Code, Part C was redesignated Part A-1.

gases, free solids, and totally dissolved solids) by physical or mechanical action and includes a bare pump and, if included by the manufacturer at the time of sale, mechanical equipment, driver, and controls. 10 CFR 431.462. Dedicated-purpose pool pumps, which are the subject of this RFI, meet this definition of a pump and are covered under the pump equipment type.

The energy conservation program under EPCA consists essentially of four parts: (1) testing, (2) labeling, (3) Federal energy conservation standards, and (4) certification and enforcement procedures. Relevant provisions of EPCA include definitions (42 U.S.C. 6311), test procedures (42 U.S.C. 6314), labeling provisions (42 U.S.C. 6315), energy conservation standards (42 U.S.C. 6313), and the authority to require information and reports from manufacturers (42 U.S.C. 6316).

Federal energy efficiency requirements for covered equipment established under EPCA generally supersede State laws and regulations concerning energy conservation testing, labeling, and standards. (42 U.S.C. 6316(a) and 42 U.S.C 6316(b); 42 U.S.C. 6297) DOE may, however, grant waivers of Federal preemption for particular State laws or regulations, in accordance with the procedures and other provisions set forth under EPCA. (42 U.S.C. 6316(a) (applying the preemption waiver provisions of 42 U.S.C. 6297))

EPCA also requires that, not later than 6 years after the issuance of any final rule establishing or amending a standard, DOE evaluate the energy conservation standards for each type of covered equipment, including those at issue here, and publish either a notification of determination that the standards do not need to be amended, or a NOPR that includes new proposed energy conservation standards (proceeding to a final rule, as appropriate). (42 U.S.C. 6316(a); 42 U.S.C. 6295(m)(1)) If DOE determines not to amend a standard based on the statutory criteria, not later than 3 years after the issuance of a final determination not to amend

standards, DOE must publish either a notification of determination that standards for the product do not need to be amended, or a NOPR including new proposed energy conservation standards (proceeding to a final rule, as appropriate). (42 U.S.C. 6316(a); 42 U.S.C. 6295(m)(3)(B)) DOE must make the analysis on which a determination is based publicly available and provide an opportunity for written comment. (42 U.S.C. 6316(a); 42 U.S.C. 6295(m)(2))

In proposing new standards, DOE must evaluate that proposal against the criteria of 42 U.S.C. 6295(o), as described in the following section, and follow the rulemaking procedures set out in 42 U.S.C. 6295(p). (42 U.S.C. 6316(a); 42 U.S.C. 6295(m)(1)(B)) If DOE decides to amend the standard based on the statutory criteria, DOE must publish a final rule not later than two years after energy conservation standards are proposed. (42 U.S.C. 6316(a); 42 U.S.C. 6295(m)(3)(A))

On January 18, 2017, DOE published a direct final rule ("January 2017 Direct Final Rule")[3] to codify energy conservation standards for DPPPs manufactured or imported to the United States. 82 FR 5650. The energy conservation standards are consistent with the recommendations of the Appliance Standards Rulemaking Federal Advisory Committee ("ASRAC") negotiated rulemaking working group for dedicated-purpose pool pumps (82 FR 5650, 5658). (Docket No. EERE-2015-BT-STD-0008, Nos. 51 and 82) The current energy conservation standards are located in title 10 of the Code of Federal Regulations ("CFR") part 431, section 465(f)-(h). DOE established performance-based standards, expressed in terms of weighted energy factor ("WEF"), for certain DPPP classes. 10 CFR 431.465(f). For certain classes of DPPPs, including those classes subject to the performance standards, DOE established a design requirement. 10 CFR 431.465(g) and (h). Compliance with the standards established

[3] On May 26, 2017, DOE published a confirmation of the effective date and compliance date for the direct final rule, confirming adoption of the energy conservation standards established in the direct final rule. 82 FR 24218.

for DPPPs is required on and after July 19, 2021. The currently applicable DOE test procedures for DPPPs appear at 10 CFR part 431, subpart Y, appendices B and C ("Appendices B and C").

DOE is publishing this RFI to collect data and information to inform this rulemaking consistent with its obligations under EPCA.

B. Rulemaking Process

DOE must follow specific statutory criteria for prescribing new or amended standards for covered equipment. EPCA requires that any new or amended energy conservation standard prescribed by the Secretary of Energy ("Secretary") be designed to achieve the maximum improvement in energy or water efficiency that is technologically feasible and economically justified. (42 U.S.C. 6316(a); 42 U.S.C. 6295(o)(2)(A)) The Secretary may not prescribe an amended or new standard that will not result in significant conservation of energy or is not technologically feasible or economically justified. (42 U.S.C. 6316(a); 42 U.S.C. 6295(o)(3))

To adopt any new or amended standards for a covered product, DOE must determine that such action would result in significant energy savings. (42 U.S.C. 6295(o)(3)(B))

The significance of energy savings offered by a new or amended energy conservation standard cannot be determined without knowledge of the specific circumstances surrounding a given rulemaking.[4] For example, the United States has now rejoined the Paris Agreement on February 19, 2021. As part of that agreement, the United States has committed to reducing GHG emissions in order to limit the rise in mean global temperature. As such, energy savings that reduce GHG emission have taken on greater importance. Additionally, some covered products

[4]The numeric threshold for determining the significance of energy savings established in a final rule published on February 14, 2020 (85 FR 8626, 8670), was subsequently eliminated in a final rule published on December 13, 2021 (86 FR 70892, 70906).

and equipment have most of their energy consumption occur during periods of peak energy demand. The impacts of these products on the energy infrastructure can be more pronounced than products with relatively constant demand. In evaluating the significance of energy savings, DOE considers differences in primary energy and FFC effects for different covered products and equipment when determining whether energy savings are significant. Primary energy and FFC effects include the energy consumed in electricity production (depending on load shape), in distribution and transmission, and in extracting, processing, and transporting primary fuels (i.e., coal, natural gas, petroleum fuels), and thus present a more complete picture of the impacts of energy conservation standards.

Accordingly, DOE evaluates the significance of energy savings on a case-by-case basis.

To determine whether a standard is economically justified, EPCA requires that DOE determine whether the benefits of the standard exceed its burdens by considering, to the greatest extent practicable, the following seven factors:

(1) The economic impact of the standard on the manufacturers and consumers of the affected products;

(2) The savings in operating costs throughout the estimated average life of the product compared to any increases in the initial cost, or maintenance expenses likely to result from the standard;

(3) The total projected amount of energy and water (if applicable) savings likely to result directly from the standard;

(4) Any lessening of the utility or the performance of the equipment likely to result from the standard;

(5) The impact of any lessening of competition, as determined in writing by the Attorney

General, that is likely to result from the standard;

(6) The need for national energy and water conservation; and

(7) Other factors the Secretary considers relevant.

(42 U.S.C. 6316(a); 42 U.S.C. 6295(o)(2)(B)(i)(I)-(VII))

DOE fulfills these and other applicable requirements by conducting a series of analyses throughout the rulemaking process. Table I.1 shows the individual analyses that are performed to satisfy each of the requirements within EPCA.

Table I.1 EPCA Requirements and Corresponding DOE Analysis

EPCA Requirement	Corresponding DOE Analysis
Significant Energy Savings	• Shipments Analysis • National Impact Analysis • Energy and Water Use Analysis
Technological Feasibility	• Market and Technology Assessment • Screening Analysis • Engineering Analysis
Economic Justification:	
1. Economic Impact on Manufacturers and Consumers	• Manufacturer Impact Analysis • Life-Cycle Cost and Payback Period Analysis • Consumer Subgroup Analysis • Shipments Analysis
2. Lifetime Operating Cost Savings Compared to Increased Cost for the Equipment	• Markups for Equipment Price Determination • Energy and Water Use Analysis • Life-Cycle Cost and Payback Period Analysis
3. Total Projected Energy Savings	• Shipments Analysis • National Impact Analysis
4. Impact on Utility or Performance	• Screening Analysis • Engineering Analysis
5. Impact of Any Lessening of Competition	• Manufacturer Impact Analysis
6. Need for National Energy and Water Conservation	• Shipments Analysis • National Impact Analysis
7. Other Factors the Secretary Considers Relevant	• Employment Impact Analysis • Utility Impact Analysis • Emissions Analysis • Monetization of Emission Reductions Benefits • Regulatory Impact Analysis

As detailed throughout this RFI, DOE is publishing this document seeking input and data from interested parties to aid in the development of the technical analyses on which DOE will ultimately rely to determine whether (and if so, how) to amend the standards for DPPPs.

C. Deviation from Appendix A

In accordance with Section 3(a) of 10 CFR part 430, subpart C, appendix A, DOE notes that it is deviating from that appendix's provision requiring a 75 day comment period for all pre-NOPR standards documents. 10 CFR part 430, subpart C, appendix A, section 6(d)(2). DOE is opting to deviate from this step because DOE believes that 30 days is a sufficient time to respond to this initial rulemaking document given stakeholder engagement and participation in prior rulemaking activities regarding dedicated-purpose pool pumps.

II. Request for Information and Comments

In the following sections, DOE has identified a variety of issues on which it seeks input to aid in the development of the technical and economic analyses regarding whether amended standards for DPPPs.

A. Equipment Covered by This Process

This RFI covers those products that meet the definitions of DPPPs, as codified at 10 CFR 431.462. The definitions for DPPPs were established by a test procedure final rule published on August 7, 2017. 82 FR 36858.

Issue 1: DOE requests comment on whether the definitions for DPPPs require any revisions – and if so, how those definitions should be revised. DOE also requests feedback on whether the sub-category definitions currently in place are appropriate or whether further modifications are needed. If these sub-category definitions need modifying, DOE seeks specific input on how to define these terms and why such modifications are needed.

Issue 2: DOE requests comment on whether additional equipment definitions are necessary to close any potential gaps in coverage between equipment varieties. DOE also seeks input on whether such equipment currently exist in the market or whether they are being planned

for introduction.

B. Market and Technology Assessment

The market and technology assessment that DOE routinely conducts when analyzing the impacts of a potential new or amended energy conservation standard provides information about the DPPP industry that will be used in DOE's analysis throughout the rulemaking process. DOE uses qualitative and quantitative information to characterize the structure of the industry and market. DOE identifies manufacturers, estimates market shares and trends, addresses regulatory and non-regulatory initiatives intended to improve energy efficiency or reduce energy consumption, and explores the potential for efficiency improvements in the design and manufacturing of DPPPs. DOE also reviews equipment literature, industry publications, and company websites. Additionally, DOE considers conducting interviews with manufacturers to improve its assessment of the market and available technologies for DPPPs.

1. Equipment Classes

When evaluating and establishing energy conservation standards, DOE may divide covered equipment into equipment classes by the type of energy used, or by capacity or other performance-related features that justify a different standard. (42 U.S.C. 6316(a); 42 U.S.C. 6295(q)(1)) In determining whether capacity or another performance-related feature justifies a different standard, DOE must consider such factors as the utility of the feature to the consumer and other factors DOE deems appropriate. (*Id*.)

For DPPPs, the current energy conservation standards specified in 10 CFR 431.465 are based on the following performance-related features: strainer or filtration accessory, self-priming ability, pump capacity, and rotational speed. Table II.1 lists the seven current equipment classes for DPPPs.

Table II.1 Current Dedicated-Purpose Pool Pumps Equipment Classes

Equipment Class	
1	Standard-Size Self-Priming Pool Filter Pump (0.711 hp ≤ hhp < 2.5 hp)
2	Small-Size Self-Priming Pool Filter Pump (hhp < 0.711 hp)
3	Non-Self-Priming Pool Filter Pump (hhp < 2.5 hp)
4	Pressure Cleaner Booster Pump
5	Waterfall Pump
6	Integral Cartridge Filter Pool Pump
7	Integral Sand Filter Pool Pump

Issue 3: DOE requests feedback on the current DPPP equipment classes and whether changes to these individual equipment classes and their descriptions should be made or if novel equipment can be classified as multiple different units.

The DPPPs ASRAC Working Group limited its scope to self-priming and non-self-priming pool filter pumps with hydraulic output power less than 2.5 horsepower, as those pumps are typically installed in residential applications (Docket No. EERE-2015-BT-0008, No. 82, pp. 1-2). Very large pool filter pumps, with hydraulic output of 2.5 horsepower or more, are more commonly installed in commercial applications, where the head and flow characteristics are significantly different from residential installations. The ASRAC DPPP Working Group also noted a lack of performance data for these very large pool filter pumps, which prevented the group from negotiating standards for these pumps. (Docket No. EERE-2015-BT-STD-0008, No. 53 at pp. 197-198; Docket No. EERE-2015-BT-STD-0008, No. 79 at pp. 33-34, pp. 41-42, pp. 44-48, pp. 50-53).

Following adoption of the test procedure and energy conservation standards for DPPPs, manufacturers identified several models of DPPPs that are designed and marketed for commercial applications, but do in fact have hydraulic output power less than 2.5 horsepower. The Office of the General Counsel has issued an enforcement policy statement regarding these

DPPPs.[5] The policy states that DOE will not enforce the testing, labeling, certification, and standards compliance requirements for DPPPs meeting all of the following three criteria:

(1) The orifice on the pump body that accepts suction side plumbing connections has an inner diameter of greater than 2.85 inches; and

(2) The pump has a measured performance of ≥200 gallons per minute (gpm) at 50 feet of head as determined in accordance with appendices B or C (as applicable) to subpart Y of part 431, section I.A.1 (When determining overall efficiency, best efficiency point, or other applicable pump energy performance information, section 40.6.5.5.1, "Test procedure"; section 40.6.6.2, "Pump efficiency"; and section 40.6.6.3, "Performance curve" must be used, as applicable); and

(3) The pump is marketed exclusively for commercial applications.

As explained in the enforcement policy statement, these pumps were not considered during the ASRAC negotiations, but were not explicitly exempted in the regulatory text.

Issue 4: DOE seeks information regarding any other new equipment classes it should consider for inclusion in its analysis. Specifically, DOE requests information on performance-related features that provide unique consumer utility and data detailing the corresponding impacts on energy use that would justify separate equipment classes (i.e., explanation for why the presence of these performance-related features would increase energy consumption).

2. Technology Assessment

[5] *www.energy.gov/gc/articles/direct-purpose-pool-pumps-enforcement-policy*

In analyzing the feasibility of potential new or amended energy conservation standards, DOE uses information about existing and past technology options and prototype designs to help identify technologies that manufacturers could use to meet and/or exceed a given set of energy conservation standards under consideration. In consultation with interested parties, DOE intends to develop a list of technologies to consider in its analysis. That analysis will likely include a number of the technology options DOE previously considered during its most recent rulemaking for DPPPs. A complete list of those prior options appears in Table II.2. *See also* 82 FR 5650, 5676-5679.

Table II.2 Technology Options Considered in the Development of the January 2017 Direct Final Rule

Improved Motor Efficiency
Ability to Operate at Reduced Speed
Improved Hydraulic Design
Pool Pump Timer

Issue 5: DOE seeks information on the technology options listed in Table II.2 regarding their applicability to the current market and how these technologies may impact the efficiency of DPPPs as measured according to the DOE test procedure. DOE also seeks information on how these technologies may have changed since their prior consideration during the January 2017 Direct Final Rule analysis. Specifically, DOE seeks information on the range of efficiencies or performance characteristics that are currently available for each technology option.

Issue 6: DOE seeks comment on other technology options that it should consider for inclusion in its analysis and details regarding the extent to which these technologies may impact equipment features or consumer utility. DOE also seeks input regarding the cost-effectiveness of implementing these options.

Issue 7: DOE seeks comment on other technology options that it should consider for inclusion in its analysis and if these technologies may impact product features or consumer utility.

C. Screening Analysis

The purpose of the screening analysis is to evaluate the technologies that improve equipment efficiency to determine which technologies will be eliminated from further consideration and which will be passed to the engineering analysis for further consideration.

DOE determines whether to eliminate certain technology options from further consideration based on the following criteria:

(1) *Technological feasibility*. Technologies that are not incorporated in commercial equipment or in working prototypes will not be considered further.

(2) *Practicability to manufacture, install, and service.* If it is determined that mass production of a technology in commercial equipment and reliable installation and servicing of the technology could not be achieved on the scale necessary to serve the relevant market at the time of the compliance date of the standard, then that technology will not be considered further.

(3) *Impacts on equipment utility or equipment availability.* If a technology is determined to have significant adverse impact on the utility of the equipment to significant subgroups of consumers, or result in the unavailability of any covered equipment type with performance characteristics (including reliability), features, sizes, capacities, and volumes that are substantially the same as equipment generally available in the United States at the time, it will not be considered further.

(4) *Adverse impacts on health or safety.* If it is determined that a technology will have significant adverse impacts on health or safety, it will not be considered further.

(5) *Unique-Pathway Proprietary Technologies.* If a design option utilizes proprietary technology that represents a unique pathway to achieving a given efficiency level, that technology will not be considered further due to the potential for monopolistic concerns.

10 CFR 431.4; 10 CFR part 430, subpart C, appendix A, sections 6(b)(3) and 7(b).

Technology options identified in the technology assessment are evaluated against these criteria using DOE analyses and inputs from interested parties (*e.g.*, manufacturers, trade organizations, and energy efficiency advocates). Technologies that pass through the screening analysis are referred to as "design options" in the engineering analysis. Technology options that fail to meet one or more of the five criteria are eliminated from consideration.

None of the technology options listed in Table II.2 were screened out in the January 2017 Direct Final Rule.

Issue 8: DOE requests feedback on what impact, if any, the five screening criteria described in this section would have on each of the technology options listed in Table II.2 and Table II.3 of this RFI with respect to DPPPs. Similarly, DOE seeks information regarding how these same criteria would affect any other technology options not already identified in this document with respect to their potential use in DPPPs.

D. Engineering Analysis

The purpose of the engineering analysis is to establish the relationship between the efficiency and cost of DPPPs. There are two elements to consider in the engineering analysis; the selection of efficiency levels to analyze (i.e., the "efficiency analysis") and the determination of product cost at each efficiency level (i.e., the "cost analysis"). In determining the performance of higher-efficiency equipment, DOE considers technologies and design option combinations not eliminated by the screening analysis. For each equipment class, DOE estimates the baseline cost, as well as the incremental cost for the product/equipment at efficiency levels above the baseline. The output of the engineering analysis is a set of cost-efficiency "curves" that are used in downstream analyses (i.e., the life-cycle cost ("LCC") and payback period ("PBP") analyses and the NIA).

1. Efficiency analysis

DOE typically uses one of two approaches to develop energy efficiency levels for the engineering analysis: (1) relying on observed efficiency levels in the market (i.e., the efficiency-level approach), or (2) determining the incremental efficiency improvements associated with incorporating specific design options to a baseline model (i.e., the design-option approach). Using the efficiency-level approach, the efficiency levels established for the analysis are determined based on the market distribution of existing products (in other words, based on the range of efficiencies and efficiency level "clusters" that already exist on the market). Using the design option approach, the efficiency levels established for the analysis are determined through detailed engineering calculations and/or computer simulations of the efficiency improvements from implementing specific design options that have been identified in the technology assessment. DOE may also rely on a combination of these two approaches. For example, the efficiency-level approach (based on actual products on the market) may be extended using the design option approach to interpolate to define "gap fill" levels (to bridge large gaps between

other identified efficiency levels) and/or to extrapolate to the max-tech level (particularly in cases where the max-tech level exceeds the maximum efficiency level currently available on the market).

For each established equipment class, DOE selects a baseline model as a reference point against which any changes resulting from new or amended energy conservation standards can be measured. The baseline model in each equipment class represents the characteristics of common or typical equipment in that class. Typically, a baseline model is one that meets the current minimum energy conservation standards and provides basic consumer utility. Consistent with this analytical approach, DOE tentatively plans to consider the current minimum energy conservation standards (which went into effect July 19, 2021) to establish baseline efficiency levels for each equipment class group. The current standards for each equipment class are found at 10 CFR 431.465(f)-(h).

Issue 9: DOE requests feedback (including data) on whether the current established energy conservation standards for DPPPs appropriate baseline efficiency levels for DOE are to apply to each equipment class group in evaluating whether to amend the current energy conservation standards for these equipment classes.

Issue 10: DOE requests feedback on the appropriate baseline efficiency levels for any equipment classes that are not currently in place, such as pool filter pumps with hydraulic horsepower greater than or equal to 2.5 horsepower, or DPPPs subject to the enforcement policy.

As part of DOE's analysis, the maximum available efficiency level is the most efficient unit currently available on the market. For the January 2017 Direct Final Rule, DOE did not directly analyze every available DPPP capacity. Rather, DOE selected and analyzed certain

representative capacities from each equipment class and based its overall analysis for each equipment class on those representative units. The representative units from each equipment class were determined based on horsepower ratings, in addition to corresponding shipment volumes, examination of manufacturers' catalog data, and soliciting feedback from interested parties.

DOE defines a max-tech efficiency level to represent the theoretical maximum possible efficiency if all available design options are incorporated in a model. In applying these design options, DOE would only include those that are compatible with each other that when combined, would represent the theoretical maximum possible efficiency. In many cases, the max-tech efficiency level is not commercially available because it is not economically feasible. In the January 2017 Direct Final Rule, DOE determined max-tech efficiency levels using energy modeling as well as input from interested parties during negotiation. These energy models were based on using various technology options (as discussed in section II.B.2 of this RFI) applicable to specific equipment classes. While all these equipment configurations had not likely been tested as prototypes, all the individual design options had been incorporated in available equipment, and therefore a compatible combination of the design options used for max-tech is theoretically possible. The max-tech efficiency levels analyzed in the January 2017 Direct Final Rule are included in Table II.3.

Table II.3. Max-Tech Efficiency Levels Analyzed in the January 2017 Direct Final Rule

Equipment Class	Pump Variety	Motor Nameplate Efficiency at High Speed (%)	Horsepower Rating (hhp)	Weighted Energy Factor, WEF (kgal/kWh)
1	Standard-Size Self-Priming Pool Filter Pump	82%	1.88	6.97
		81%	0.95	8.59
2	Small-Size Self-Priming Pool Filter Pump	81%	0.44	11.71
3	Standard-Size Non-Self-Priming Pool Filter Pump	81%	0.52	11.96
4	Extra-Small Non-Self-Priming Pool Filter Pump	72%	0.09	5.14
5	Pressure Cleaner Booster Pump	81%	0.28	0.56
6	Waterfall Pump	78%	0.40	9.85

Issue 11: DOE seeks input on whether it is appropriate to use the same representative units for the purpose of the engineering analysis.

Issue 12: DOE seeks input on whether the max-tech efficiency levels presented in Table II.3 are appropriate and technologically feasible for potential consideration as possible energy conservation standards – and if not, why not. DOE also requests feedback on whether the max-tech efficiencies presented in Table II.3 of this RFI are representative of other pump capacities not directly analyzed in the January 2017 Direct Final Rule. If the range of possible efficiencies is different for the other pump capacities not analyzes, what alternative approaches should DOE consider using for those pump capacities and why?

Issue 13: DOE seeks feedback on what design options would be incorporated for each equipment class at a max-tech efficiency level, and the efficiencies associated with those levels.

Issue 14: DOE requests feedback on the appropriate max-tech efficiency levels for any equipment classes that are not currently in place, such as pool filter pumps with hydraulic horsepower greater than or equal to 2.5 horsepower, or DPPPs subject to the enforcement policy.

2. Cost analysis

The cost analysis portion of the engineering analysis is conducted using one or a combination of cost approaches. The selection of cost approach depends on a suite of factors, including availability and reliability of public information, characteristics of the regulated product, and the availability and timeliness of purchasing the equipment on the market. The cost approaches are summarized as follows:

- *Physical teardowns*: Under this approach, DOE physically dismantles a commercially available product, component-by-component, to develop a detailed bill of materials for the product.

- *Catalog teardowns*: In lieu of physically deconstructing a product, DOE identifies each component using parts diagrams (available from manufacturer websites or appliance repair websites, for example) to develop the bill of materials for the product.

- *Price surveys*: If neither a physical nor catalog teardown is feasible (for example, for tightly integrated products such as fluorescent lamps, which are infeasible to disassemble and for which parts diagrams are unavailable) or cost-prohibitive and otherwise impractical (*e.g.* large commercial boilers), DOE conducts price surveys using publicly available pricing data published on major online retailer

websites and/or by soliciting prices from distributors and other commercial channels.

The bill of materials provides the basis for the manufacturer production cost ("MPC") estimates. DOE then applies a manufacturer markup to convert the MPC to manufacturer selling price ("MSP"). The manufacturer markup accounts for costs such as overhead and profit. The resulting bill of materials provides the basis for the manufacturer production cost ("MPC") estimates.

As described at the beginning of this section, the main outputs of the engineering analysis are cost-efficiency relationships that describe the estimated increases in manufacturer production cost associated with higher-efficiency equipment for the analyzed equipment classes. For the January 2017 Direct Final Rule, DOE developed the cost-efficiency relationships by estimating the efficiency improvements and costs associated with incorporating specific design options into the assumed baseline model for each analyzed equipment class.

Issue 15: DOE requests feedback on whether manufacturers would incorporate the technology options listed in Table II.2 of this RFI to increase energy efficiency of DPPPs beyond the baseline, and if so, how. This includes information on the order in which manufacturers would incorporate the different technologies to incrementally improve the efficiencies of equipment. DOE also requests feedback on whether the increased energy efficiency of DPPPs would lead to other design changes that would not occur otherwise, and if so, what those changes would be. DOE is also interested in information regarding any potential impact of adopting a given design option on a manufacturer's ability to incorporate additional functions or attributes in response to consumer demand.

Issue 16: DOE also seeks input on the increase in MPC associated with incorporating each design option. Specifically, DOE is interested in whether and how the costs estimated for design options in the January 2017 Direct Final Rule have changed since the time of that analysis. DOE also requests information on the investments needed to incorporate specific design options, including, but not limited to, costs related to new or modified tooling (if any), materials, engineering and development efforts to implement each design option, and manufacturing/production impacts.

Issue 17: DOE requests comment on whether certain design options may not be applicable to (or incompatible with) specific equipment classes.

To account for manufacturers' non-production costs and profit margin, DOE applies a non-production cost multiplier (the manufacturer markup) to the MPC. The resulting manufacturer selling price ("MSP") is the price at which the manufacturer distributes a unit into commerce. For the 2017 Direct Final Rule, DOE used a manufacturer markup of 1.46 for self-priming pool filter pumps and waterfall pumps, 1.35 for non-self-priming pool filter pumps and pressure cleaner booster pool pumps, and 1.27 for integral cartridge-filter pool pumps and integral sand-filter pool pumps. DOE developed these estimated markups based on corporate reports and conversations with manufacturers and experts. See chapter 6 of the January 2017 Direct Final Rule TSD for further detail.

Issue 18: DOE requests feedback on whether the manufacturer markups used in the January 2017 Direct Final Rule are still appropriate for DOE to use when evaluating whether to amend its current standards. If the markups require revision, what specific revisions are needed for each? Are there additional markups that DOE should also consider – if so, which ones and why?

E. Markup Analysis

DOE derives customer prices based on manufacturer markups, retailer markups, distributor markups, contractor markups (where appropriate), and sales taxes. In deriving these markups, DOE determines the major distribution channels for product sales, the markup associated with each party in each distribution channel, and the existence and magnitude of differences between markups for baseline products ("baseline markups") and higher-efficiency products ("incremental markups"). The identified distribution channels (*i.e.*, how the products are distributed from the manufacturer to the consumer), and estimated relative sales volumes through each channel are used in generating end-user price inputs for the LCC analysis and national impact analysis ("NIA"). In the January 2017 Direct Final Rule, DOE accounted for three distribution channels for dedicated-purpose pool pumps: two for replacements of pool pumps for an existing swimming pool and one for installations of a pool pump in a new swimming pool. DOE also estimated the fraction of pool pumps distributed through each channel:

Existing Pool:

Manufacturer → Wholesaler → Pool Service Contractor → Consumer (75%)

Manufacturer → Pool Product Retailer → Consumer (20%)

New Pool:

Manufacturer → Pool Builder → Consumer (5%)

82 FR 5650, 5698.

In addition, in DOE's analysis in the January 2017 Direct Final Rule, in some cases only the motor component is replaced rather than the entire pool pump. Therefore, DOE also considered distribution channels to account for how motors are distributed in the motor replacement market:

Motor Manufacturer → Wholesaler → Contractor → Consumer (25%)

Motor Manufacturer → Wholesaler → Retailer → Consumer via Internet or direct sale at local stores (25%)

Pump Manufacturer → Pump Product Retailer → Consumer (50%)

82 FR 5650, 5696.

Issue 19: DOE requests information on the existence of any distribution channels other than the channels that were identified in the January 2017 Direct Final Rule and as described in section E. DOE also requests data on the fraction of sales that go through these channels and any other identified channels.

F. Energy Use Analysis

As part of the rulemaking process, DOE conducts an energy use analysis to identify how equipment is used by consumers, and thereby determine the energy savings potential of energy efficiency improvements. The energy use analysis is meant to represent the energy consumption of a given product or equipment when used in the field.

In the January 2017 Direct Final Rule, DOE determined the annual energy consumption of DPPPs by multiplying the average daily unit energy consumption ("UEC") by the annual days of operation. For single-speed pool pumps, the daily UEC is the pool pump power multiplied by the daily operating hours. For two-speed and variable-speed pool pumps, the daily UEC is the sum of low-speed mode power, multiplied by daily low-speed operating hours, and the high-speed mode power, multiplied by the daily high-speed operating hours. 82 FR 5650, 5697. DOE's determination of power inputs, operating hours, and annual days of operation are described in detail in the January 2017 Direct Final Rule. 82 FR 5650, 5697-5700.

Issue 20: DOE requests information on whether any of the data or assumptions used to estimate average annual energy use for DPPPs need to be updated, and if so why and how.

Issue 21: DOE requests comment on the energy use patterns of pool filter pumps with hydraulic horsepower greater than or equal to 2.5 horsepower, or DPPPs subject to the enforcement policy, including (1) power inputs, (2) operating hours, and (3) annual days of operation.

G. Life-Cycle Cost and Payback Analysis

DOE conducts the LCC and PBP analysis to evaluate the economic effects of potential energy conservation standards for DPPPs on individual customers. For any given efficiency level, DOE measures the PBP and the change in LCC relative to an estimated baseline level. The LCC is the total customer expense over the life of the equipment, consisting of purchase, installation, and operating costs (expenses for energy use, maintenance, and repair). Inputs to the calculation of total installed cost include the cost of the equipment—which includes MSPs, distribution channel markups, and sales taxes—and installation costs. Inputs to the calculation of operating expenses include annual energy consumption, energy prices and price projections, repair and maintenance costs, equipment lifetimes, discount rates, and the year that compliance with new and amended standards is required.

1. Installation, Maintenance, and Repair Costs

In the January 2017 Direct Final Rule, DOE only accounted for the difference in installation cost by efficiency level. Specifically, for two-speed pumps, DOE included the cost of a timer control and its installation where applicable. For two-speed and variable-speed pumps,

DOE included supplemental installation labor costs. 82 FR 5650, 5701. DOE also assumed that for maintenance cost, there is no change with efficiency level, so DOE did not include those costs in the model. 82 FR 5650, 5702. Finally, for repair costs, DOE accounted for the cost of a motor replacement. DOE estimated that such replacement occurs at the halfway point in a pump's lifetime, but only for those dedicated-purpose pool pumps whose lifetime exceeds the average lifetime for the relevant equipment class. The cost of the motor was determined through the engineering and markups analysis. DOE used 2015 RS Means to estimate labor costs for pump motor replacement. *Id*.

Issue 22: DOE requests feedback and data on its assumptions regarding installation and maintenance costs described in section G as well as for any technology options listed in Table II.2 of this RFI.

Issue 23: To the extent that these costs differ by efficiency level, DOE seeks supporting data and the reasons for those differences.

Issue 24: DOE requests information and data on the frequency of repair and repair costs by equipment class for motor replacement or for any of the technology options listed in Table II.2 of this RFI.

2. Equipment Lifetime

In the January 2017 Direct Final Rule, DOE developed a survival function, which provides a distribution of lifetime ranging from a minimum of 2 or 3 years based on warranty covered period, to a maximum of 15 years, with a mean value of 7 years for self-priming and waterfall pumps, 5 years for non-self-priming and pressure cleaner booster pumps, and 4 years for integral pumps. These values are applicable to pumps in residential applications. For

commercial applications, DOE scaled the lifetime to acknowledge the higher operating hours compared to residential applications, resulting in a reduced average lifetime. 82 FR 5650, 5702.

Issue 25: DOE requests comment on whether the lifetime values continue to be appropriate for pool pumps currently subject to standards, and if not, how they should be changed.

Issue 26: DOE requests information on the lifetime of pool filter pumps with hydraulic horsepower greater than or equal to 2.5 horsepower and DPPPs subject to the enforcement policy.

H. Shipments

DOE develops shipments projections of DPPPs to calculate the national impacts of potential amended energy conservation standards on energy consumption, net present value ("NPV"), and future manufacturer cash flows. In the January 2017 Final Rule, DOE estimated shipments in 2015 using data collected from manufacturer interview. DOE projected shipments using growth rates obtained from manufacturer interviews, a consulting report, and several macroeconomic indicators. 82 FR 5650, 5703.

Issue 27: DOE requests 2020 annual sales data (i.e., number of shipments) for dedicated-purpose pool pumps and corresponding equipment classes (including those for pool filter pumps with hydraulic horsepower greater than or equal to 2.5 horsepower and DPPPs subject to the enforcement policy). For each class, DOE also requests the fraction of sales by class that are ENERGY STAR-qualified, as well as the fraction of sales by class that are single-speed, two-speed, or multi- and variable-speed.

Issue 28: If available, DOE requests the same information for the previous five years

(2015-2019).

I. Manufacturer Impact Analysis

The purpose of the manufacturer impact analysis ("MIA") is to estimate the financial impact of amended energy conservation standards on manufacturers of DPPPs, and to evaluate the potential impact of such standards on direct employment and manufacturing capacity. The MIA includes both quantitative and qualitative aspects. The quantitative part of the MIA primarily relies on the Government Regulatory Impact Model ("GRIM"), an industry cash-flow model adapted for each equipment in this analysis, with the key output of industry net present value ("INPV"). The qualitative part of the MIA addresses the potential impacts of energy conservation standards on manufacturing capacity and industry competition, as well as factors such as equipment characteristics, impacts on particular subgroups of firms, and important market and equipment trends.

As part of the MIA, DOE intends to analyze impacts of amended energy conservation standards on subgroups of manufacturers of covered equipment, including small business manufacturers. DOE uses the Small Business Administration's ("SBA") small business size standards to determine whether manufacturers qualify as small businesses, which are listed by the applicable North American Industry Classification System ("NAICS") code.[6] Manufacturing of DPPPs is classified under NAICS code 333914, "Measuring, Dispensing, and Other Pumping Equipment Manufacturing," and the SBA sets a threshold of 750 employees or less for a domestic entity to be considered as a small business. This employee threshold includes all employees in a business' parent company and any other subsidiaries.

[6] Available online at *sba.gov/document/support--table-size-standards*.

One aspect of assessing manufacturer burden involves examining the cumulative impact of multiple DOE standards and the equipment-specific regulatory actions of other Federal agencies that affect the manufacturers of a covered equipment. While any one regulation may not impose a significant burden on manufacturers, the combined effects of several existing or impending regulations may have serious consequences for some manufacturers, groups of manufacturers, or an entire industry. Assessing the impact of a single regulation may overlook this cumulative regulatory burden. In addition to energy conservation standards, other regulations can significantly affect manufacturers' financial operations. Multiple regulations affecting the same manufacturer can strain profits and lead companies to abandon equipment lines or markets with lower expected future returns than competing equipment. For these reasons, DOE conducts an analysis of cumulative regulatory burden as part of its rulemakings pertaining to appliance efficiency.

Issue 29: To the extent feasible, DOE seeks the names and contact information of any domestic or foreign-based manufacturers that distribute DPPPs in the United States.

Issue 30: DOE identified small businesses as a subgroup of manufacturers that could be disproportionally impacted by amended energy conservation standards. DOE requests the names and contact information of small business manufacturers, as defined by the SBA's size threshold, of DPPPs that manufacture equipment in the United States. In addition, DOE requests comment on any other manufacturer subgroups that could be disproportionally impacted by amended energy conservation standards. DOE requests feedback on any potential approaches that could be considered to address impacts on manufacturers, including small businesses.

Issue 31: DOE requests information regarding the cumulative regulatory burden impacts on manufacturers of DPPPs associated with (1) other DOE standards applying to different

equipment that these manufacturers may also make and (2) equipment-specific regulatory actions of other Federal agencies. DOE also requests comment on its methodology for computing cumulative regulatory burden and whether there are any flexibilities it can consider that would reduce this burden while remaining consistent with the requirements of EPCA.

III. Submission of Comments

DOE invites all interested parties to submit in writing by the date specified in the **DATES** section of this document, comments and information on matters addressed in this document and on other matters relevant to DOE's consideration of amended energy conservations standards for DPPPs. After the close of the comment period, DOE will review the public comments received and may begin collecting data and conducting the analyses discussed in this document.

Submitting comments via *www.regulations.gov*. The *www.regulations.gov* web page requires you to provide your name and contact information. Your contact information will be viewable to DOE Building Technologies Office staff only. Your contact information will not be publicly viewable except for your first and last names, organization name (if any), and submitter representative name (if any). If your comment is not processed properly because of technical difficulties, DOE will use this information to contact you. If DOE cannot read your comment due to technical difficulties and cannot contact you for clarification, DOE may not be able to consider your comment.

However, your contact information will be publicly viewable if you include it in the comment or in any documents attached to your comment. Any information that you do not want to be publicly viewable should not be included in your comment, nor in any document attached to your comment. If this instruction is followed, persons viewing comments will see only first and last names, organization names, correspondence containing comments, and any documents

submitted with the comments.

Do not submit to *www.regulations.gov* information for which disclosure is restricted by statute, such as trade secrets and commercial or financial information (hereinafter referred to as Confidential Business Information ("CBI")). Comments submitted through *www.regulations.gov* cannot be claimed as CBI. Comments received through the website will waive any CBI claims for the information submitted. For information on submitting CBI, see the Confidential Business Information section.

DOE processes submissions made through *www.regulations.gov* before posting. Normally, comments will be posted within a few days of being submitted. However, if large volumes of comments are being processed simultaneously, your comment may not be viewable for up to several weeks. Please keep the comment tracking number that *www.regulations.gov* provides after you have successfully uploaded your comment.

Submitting comments via email. Comments and documents submitted via email also will be posted to *www.regulations.gov*. If you do not want your personal contact information to be publicly viewable, do not include it in your comment or any accompanying documents. Instead, provide your contact information on a cover letter. Include your first and last names, email address, telephone number, and optional mailing address. The cover letter will not be publicly viewable as long as it does not include any comments.

Include contact information each time you submit comments, data, documents, and other information to DOE. No faxes will be accepted.

Comments, data, and other information submitted to DOE electronically should be

provided in PDF (preferred), Microsoft Word or Excel, or text (ASCII) file format. Provide documents that are not secured, written in English and free of any defects or viruses. Documents should not contain special characters or any form of encryption and, if possible, they should carry the electronic signature of the author.

Campaign form letters. Please submit campaign form letters by the originating organization in batches of between 50 to 500 form letters per PDF or as one form letter with a list of supporters' names compiled into one or more PDFs. This reduces comment processing and posting time.

Confidential Business Information. Pursuant to 10 CFR 1004.11, any person submitting information that he or she believes to be confidential and exempt by law from public disclosure should submit via email two well-marked copies: one copy of the document marked confidential including all the information believed to be confidential, and one copy of the document marked "non-confidential" with the information believed to be confidential deleted. DOE will make its own determination about the confidential status of the information and treat it according to its determination.

It is DOE's policy that all comments may be included in the public docket, without change and as received, including any personal information provided in the comments (except information deemed to be exempt from public disclosure).

DOE considers public participation to be a very important part of the process for developing energy conservation standards. DOE actively encourages the participation and interaction of the public during the comment period in this process. Interactions with and between members of the public provide a balanced discussion of the issues and assist DOE.

Anyone who wishes to be added to the DOE mailing list to receive future notices and information about this process or would like to request a public meeting should contact Appliance and Equipment Standards Program staff at (202) 287-1445 or via e-mail at *ApplianceStandardsQuestions@ee.doe.gov*.

Signing Authority

This document of the Department of Energy was signed on January 12, 2022, by Kelly J. Speakes-Backman, Principal Deputy Assistant Secretary for Energy Efficiency and Renewable Energy, pursuant to delegated authority from the Secretary of Energy. That document with the original signature and date is maintained by DOE. For administrative purposes only, and in compliance with requirements of the Office of the Federal Register, the undersigned DOE Federal Register Liaison Officer has been authorized to sign and submit the document in electronic format for publication, as an official document of the Department of Energy. This administrative process in no way alters the legal effect of this document upon publication in the *Federal Register*.

Signed in Washington, DC, on January 12, 2022.

Treena V. Garrett,
Federal Register Liaison Officer,
U.S. Department of Energy.

[FR Doc. 2022-00849 Filed: 1/21/2022 8:45 am; Publication Date: 1/24/2022]